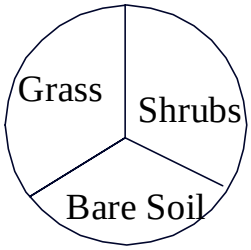
THE COVEY HEADQUARTERS

Volume 6 Issue 1 Spring 2007

This newsletter issue starts the sixth year of an effort aimed at cooperators and sportspeople in Missouri to provide information on restoring quail. This is a joint effort of the Missouri Department of Conservation, USDA-Natural Resources Conservation Service, University of Missouri Extension and Quail Unlimited. If you would like to be removed from this mailing list or have suggestions for future articles please contact jeff.powelson@mdc.mo.gov or 816-232-6555 x122 or write to the address shown.



The name of this newsletter is taken from an old concept.....that a quail covey operates from a headquarters (shrubby cover). If the rest of the covey's habitat needs are nearby, a covey should be present. We are encouraging landowners to manage their quail habitat according to this concept. Use shrubs as the cornerstone for your quail management efforts. Manage for a diverse grass, broadleaf weed and legume mixture and provide bare ground with row crops, food plots or light disking **right next to** the shrubby area.

Ice, Snow, and Quail – Oh My!

Steven Noll, Wildlife Management Biologist, Fayette, MO

We have all read how important high quality and well dispersed shrubby cover is to quail when it comes to survival and general habitat needs. I'd like to take this opportunity to relate to you my experiences and observations this winter on public land in central Missouri regarding this topic. MDC is conducting a monitoring and evaluation project on public land to "watch" how quail use various habitats and land management treatments. We have radio collared a number of birds to monitor their use of nesting, brood rearing, and shrubby cover as it relates to my "mental model" of how and what birds will use from what is available on the area. Remember the snow and cold temperatures we had at the beginning of last December? We located our radio marked birds on December 6th; several days after the snow had fallen and during the low temperatures, to determine which portions of the area they were using for protection. We found more than 75% of our marked quail directly within either recently renovated hedgerows or within man-made brushpiles less than four years old. These hedgerows were renovated by using the "chop-n-drop" method; basically cutting every tree within the hedgerow and letting it fall as is into adjacent fields. Similarly the brushpiles were man-made using a skidsteer and clipper attachment and were what I consider very dense for quail-friendly brushpiles. In fact, the birds held so tight within the shrubby cover, we initially thought we were looking for dead birds or cast off radio collars. Each covey was found in shrubby cover in close proximity to either a food plot or idle portion of a cropfield border which was comprised of food producing plants. All coveys located during the early December 2006 winter weather event were found within 25 feet of shrubby escape cover.

Fast forward six weeks to the date of this writing, mid-January, and we are experiencing 3" of ice covering most everything, a week plus of freezing temperatures with nights in the single digits and then a fresh dusting of 4" snow, and guess where our marked quail are located? That's right, we found our birds again this week using quality shrubby cover. This past week all our birds were again found within 25 feet of shrubby cover.

You have also probably heard what I call "the 70-foot rule" before, that quail are typically always found within 70 feet of shrubby cover during winter. I have found this to be true as well of the radio marked birds we are currently following. Seventy-seven percent of our quail locations have been within 25 feet and 91% have been within 75 feet of shrubby cover. As a biologist or land manager focusing on early successional wildlife, this reinforces the importance of having high quality and widely dispersed shrubby cover.

As review, what is high quality shrubby cover? Good shrubby cover consists of shrub species that form a canopy from 3'-12' from the ground and are dense enough to impede raptors. Species that provide this structure include wild plum, roughleaf and gray dogwood, hazelnut, witch hazel, blackberry, aromatic sumac, coralberry, chokecherry, and elderberry. Good shrubby cover can also consist of edge-feathered fencelines, woody draws, and woodland edges. Regardless of how you create your shrubby cover, it can't be stressed enough that these areas need to be free of sod forming grasses such as fescue or brome. All quail habitat managers should watch to ensure that available shrubby cover has bare ground beneath and adjacent to allow bird movement. If you don't have bareground beneath your shrubby cover you, use a herbicide before bud break or after leaf drop, to control grasses. This is time consuming and tedious, but necessary if your shrubby cover is to provide what quail need.

Editor's note - We have had several interesting observations of quail habitat use during the extreme winter weather. Reports of snow depths of 18-22 inches were common and the snow was followed by several nights of temperatures in the teens to a few degrees below zero. Then a major ice storm hit much of southern Missouri. The following observations have provided some of the most compelling evidence that we are on the right track with most of our thoughts on covey headquarters, edge feathering, and downed tree structures.

After the snow melted a group of hunters in central Missouri visited a farm that had several good covey headquarters of blackberry, plum, and buckbrush. Quail roosts were found in several of these headquarters and the number of roosts found in each indicated that the birds had spent almost every night since the snowstorm in the covey headquarters. No roosts were found in the older plum thickets that had lost their upright open canopy growth habit.

A hunter from NW Missouri stated his quail used CRP grass throughout the fall and early winter. Once the first snowfall occurred in early January, all covey flushes the rest of the season were from edge feathering completed in the last 2 years.

It does not appear that quail in managed habitat suffered extensively during and after the severe weather and relied on heavy cover provided by edge feathering, downed tree structures, and natural covey headquarters to tough out the cold and deep snow. On the other hand, a few biologists reported seeing quail on snowplowed roads and trails in areas where habitat is poor. These quail where likely experiencing trouble locating adequate food and not being able to find adequate thermal cover afforded by covey headquarters.

Quail are not out of the woods yet – late winter storms, such as in 1960, are major quail killers because fat levels are low, and food is scarce. Still, quail in good habitat have a better chance of surviving rough winters. For example, two 3-year studies in Missouri found winter quail survival to be 29-37% in excellent habitat at Blind Pony Lake Conservation Area, but only 14-17% on private lands dominated by poor habitat in Knox and Macon Counties.

Build it and they will come…

I've been assisting with habitat work on a 250 acre farm since 2000. The farm has been managed by doing Quail Habitat Initiative (QHI, a program of MDC and Quail Unlimited) projects for the past 3-4 years and was enrolled in the USDA Upland Buffers Program (CP33) about a year and half ago. Whistle counts have been conducted on the farm since the beginning. In the beginning, quail habitat was very limiting and there were only a few scattered birds like many farms we see with poor cover. After doing some native warm-season grass field borders, fescue conversion, and edge feathering with QHI, a covey or two was formed after the first year of work. The landowner continued to complete more projects around the fields of his farm over a couple more years. The covey size and number of coveys increased to 4-5 coveys. After CP33 was announced the landowner enrolled his entire farm into 120 ft. buffers and did lots of edge feathering to complement the buffers on both sides of his farm. The bird numbers after only one year of CP33 increased dramatically and that year covey whistle counts were up to 9 coveys. The landowner was so impressed by the quail response that he is now working with adjoining landowners to try and have them do more habitat work in the area. **Nick Prough, Cass Co.**

About 4 years ago, we began managing for quail on our row-crop farm. We focused on our worst producing crop ground and enrolled those acres into general CRP. Additionally we established native warm-season grass filter strips and field borders through continuous CRP. In the past 3 years we have edge feathered over 8 acres of honey locust and hedge trees using chainsaws and a bobcat clipper. We have also sprayed the brome and fescue in our fencelines and woody draws. After sitting in a deer stand on opening morning we can tell our quail restoration plan is working. Here are the reports of 3 hunters – heard 3 coveys out of my stand and saw 2 rooster pheasants in the 2 year old CRP stand, had 3 roosters walk under my stand, jumped a covey of quail on the way to my stand and had one covey walk by while in the stand.

Granted we had a mild winter last year and an outstanding nesting season, but we have more quail and pheasants on the farm than we have had in the last 10 years. We know our quail management practices are working. In the beginning we improved habitat where we knew we had coveys. Now we are establishing habitat where we don't have birds. This year we had a new covey move into an area edge feathered in February 2006. We have not had a covey of quail on this part of the farm in many years. We have also had pheasants move back to this area of the farm.

Our oldest CRP planting is now 3 years old and we have already noticed that it is becoming too thick. The next step in our quail plan will be burning and disking the CRP grass to keep it usable for quail. This will be an annual process as we will only treat 1/3 to 1/2 of each field. This will allow for nesting cover and brood rearing cover adjacent to each other in the same field. We are near our covey goal for the farm and now believe we can achieve a higher covey goal with more habitat work and the right weather. **Anonymous, Nodaway Co.**

It has taken several years to see some success but I'm glad we finally made it. The first Sunday of gun deer season my dad and I flushed 3 coveys in 1.5 hours. All three coveys were about 100 yards from each other. The great part about this story is we only hunted about a third of the farm! **Aaron Jeffries, Osage Co.**

Did You Know???

We had a few reports from hunters that aged the quail they bagged this past hunting season. By looking at the wings, it was determined that several hatched the last week of September. One wing aged indicated that the bird hatched during the third week of October!

Nit Picking Your Property to Improve Quail Habitat – Food Plots

Aaron P. Jeffries, Upland Wildlife Coordinator, Jefferson City, MO

One of the most common mistakes landowners make is focusing on food plots and forgetting about nesting, brooding and shrubby cover. Most landowners, like me, enjoy planting food plots because they can see instant results and this is a great way to enjoy the outdoors. Remember, establishing and maintaining good nesting, brooding and shrubby cover should always take priority over food plots, especially if your farm is in an intensive row crop area. If established properly and near shrubby cover, food plots can provide quail and other wildlife a dependable food source throughout the winter.

1. **Do I replant food plots every year?** Replanting an entire food plot each year destroys ideal brooding habitat for quail. You need to realize that food plots not only provide a food source for quail but also create excellent brooding cover for 1 to 3 years. Consider dividing each food plot in half and leaving one half idle for an entire growing season (do not disk under the unplanted half). Replant the idled half the following year and leave the other half idle.
2. **Do I fertilize my food plots each year or take a soil test every three or four years?** If not, you're probably wasting time and money. Even food plots should be limed and fertilized according to a soil test to improve production. Contact your local NRCS or university extension office on how to properly take a soil test and the location of a soil testing laboratory. A soil test will cost around $12.00 per sample, but the small cost is worth it. A soil test should be taken every 3 to 4 years to reveal any changes in soil fertility.
3. **Are my food plots too small?** Food plots should be at least 30 feet wide and at least 1/4 acre in size. Plant long, winding food plots with the contour to create more edge. Food plots smaller than 1/4 acre are easily over browsed by deer and will be of little value to wildlife that winter. In areas with high deer populations, food plots should be at least 1 acre in size. Avoid using milo or soybeans in areas with high deer densities.

4. **Do I plant food plots too thick?** I am guilty of this one. Once I planted a sunflower food plot with some old sunflower birdseed. I simply broadcasted the seed, not knowing the viability of the seed or how many pounds per acre I was planting. Two weeks later I had a green carpet of sunflowers. The plot was so thick that the plants never produced any seed. See the table following this article for recommended seeding rates.
5. **Do I leave unharvested grain in cropfields?** Consider leaving a 30-foot wide strip of unharvested grain next to a field border and brushy cover. Consider not spraying these strips with herbicides during the growing season to provide additional food and cover from annual weeds.
6. **Where are my food plots located in the field?** Food plots should be located in close proximity to shrubby cover. That means food plots for quail should be **no more than 70 feet** from existing shrubs, edge feathering, briars or downed tree structures. Consider planting shrubs, creating downed tree structures, or edge feathering around food plots. Plant 1/4 to 4 acres of food plots per 40 acres of habitat.
7. **Do I plant a variety of different food plots?** If you plant all your food plots to milo, what would happen if the crop failed that year? Planting a variety of different grains, forages and legumes in different plots ensures at least one crop will produce adequate food that year. It is also a good ideal to rotate annual lespedeza, alfalfa, red clover or ladino clover into your food plot rotation for one or two years to rebuild soil fertility.
8. **Do I use herbicides on my food plots if weeds become a problem?** Sometimes food plots can fail because the plot was overtaken by annual weeds such as cocklebur or foxtail. To avoid a complete failure, consider spraying a herbicide on your food plots if weeds are canopying over the planted crop. Check with your local agri-service for recommended herbicides.

Many landowners feel the purpose of a food plot is to provide bobwhite quail with a high-energy food source during the winter. Food plots can provide a dependable food source, but only if the plots are managed properly. Landowners should remember that habitat, not food, is often the greatest limiting factor for bobwhite quail in Missouri.

Food Plot Seeding Rates

Food is seldom a limiting factor to having bobwhites on your farm. Make sure you have adequate herbaceous cover (grass, legumes, wildflowers and weeds for nesting, feeding, brood-rearing and roosting), and shrubby cover before planting food plots.

Species	Broadcast seeding rate (lbs/acre)	Planting Time
Grain or Forage Sorghum	16 lbs	May – early June
Corn	15 lbs	April – early May
Millets	20 lbs	April – June
Buckwheat	40 lbs	May – June
Soybeans	45 lbs	April – May
Oats	50 lbs	Fall – early spring
Wheat	50 lbs	September – early November
Sunflowers	8 lbs	April – early June
“Bobwhite” trailing soybeans	8 lbs	April – May

- **Rates can be reduced 50% for planting or drilling, except for soybeans, which can be reduced to 34-40 pounds/acre.**
- **Fertilize grain plots according to soil test. In the absence of a test, consider adding 150 pounds of 12-12-12 fertilizer per quarter acre of food plot**

Did You Know???

As part of the Conservation Security Program, the Natural Resources Conservation Service planned the installation of 2.8 million linear feet of native warm-season grass field borders last year. That is enough to put a field border on each side of Interstate 70 from St. Louis to KC with a side trip to Jeff City. A fully funded Conservation Security Program has the potential to put more quail and grassland bird habitat on working farms than all other Farm Bill programs combined.

Spring Covey Headquarters Calendar

March
Finish your winter edge feathering projects.
Do not burn native warm-season grass past Mar. 15 unless you are trying to stimulate it.
Burn or use an herbicide to set back CRP cool-season grasses Mar. 15 through April 30.
Over seed clover and lespedeza into recently burned or disked fields.

April
Listen for male Bobwhite whistle calls on calm clear mornings.
Spray brome and fescue underneath shrubby areas with Fusilade, Select, or Poast (check label before buying).
Burn fescue and brome to severely stunt grass, then light disk or interseed legumes.
Do not burn native warm-season grass now unless utilizing for forage or trying to eliminate brome or fescue.
Order your covey headquarter shrubs from the MDC nursery before the end of the month.
Till and fertilize food plots.

May
Quail and other grassland birds are on the nest – stay off your mower!
Conduct breeding bird surveys the last week of May thru June.
Seed food plots now for best results.
Clip weeds in newly planted warm season grasses to a height of 4-6 inches.
Seed shrub lespedeza at 8lbs/acre.
Last recommended date to plant seedling shrubs is June 1.

Brood habitat and bare ground

Quail will begin nesting in April. By mid-June several million quail chicks will hatch and face the task of getting something to eat. A young quail chick is no bigger than your thumb, weighs about a ¼ ounce, and must have bare ground to forage for insects. Brood habitat should be dominated by diverse well-spaced plants with little vegetation at ground level. The more diverse your brood habitat is, the more insects it will attract. If there is plenty of bare ground, your quail chicks will fill their stomachs faster and have a better chance of making it to adulthood. The picture at right is brood habitat created by leaving a food plot idle. There is bare ground at ground level and an overhead canopy of ragweed to protect the birds from predators and the elements. It's not too late to create brood habitat on your farm for this year's quail chicks. Leave half a food plot idle this spring or disk some strips through an old field before April 30. Spring disking promotes weedy grasses like foxtail. Fall disking promotes broadleaves like ragweed and sunflower. Think like a quail and manage your habitat at ground level.

Important Quail Plants You Should Know - 'Bobwhite' Trailing Soybean

During the mid-1970s, a team of University of Missouri, Missouri Department of Conservation and USDA Elsberry Plant Materials Center staff selected and released a trailing soybean that reseeds itself each year. This small bean is a good quail food, and the plants are valuable for brood rearing cover and late summer roosting cover.

Food-wise, trailing soybean is useful because the seed persists through the winter, and it is in the mid-range of energy-rich plants with 3.5 kcal of energy per gram of seed. Corn and ragweed contain about 4.0 kcal, and on the low end acorns contain <3.0 kcals.

The new variety of soybean vine was distributed to growers and sold commercially. In 1976, the Department began growing trailing soybeans production plots on the Reed Conservation Area near Lee Summit. The seed was harvested, cleaned, bagged and then distributed for quail restoration efforts on public Department areas throughout the state. That effort was discontinued in the 1980s.

One of the attributes of this plant is that it will reseed itself for several years after it is initially planted. Weedy grass control can be achieved using traditional soybean herbicides. Broadleaf weed control is generally not recommended because this soybean prefers to climb on other plants. For best results, lime, phosphorus and potassium should be applied according to a soil test. To lessen deer grazing impacts, plots should be at least one-half acre in size. This seed can be sown by hand or planted with a row crop planter, using bean plates/cups, or drilled. If broadcasting the seed it must be covered with soil for best results. Do not plant deeper than one inch. For a solid stand plant 8 lbs per acre. For mixed stands, plant 3-4 lbs of bobwhite soybeans with a companion crop like milo or millet at 2-3 lbs acre for a total of 5-7 lbs per acre.

Known suppliers of the 'Bobwhite' trailing soybean include:
Ernst Conservation Seed CO 800-873-3321
Adams Briscoe Seed CO 770-775-7826

Other seed suppliers in the southeastern U.S. offer similar trailing soybeans, but the origin is not known.

No single plant will bring back quail, but 'bobwhite' trailing soybeans can play a part in a quail management plan which addresses all of the habitat needs of quail.

Confessions of a Fescue Killer

Bill White, Private Land Programs Coordinator, Jefferson City, MO

While fescue is one of the main reasons for the growth and success of the Missouri beef industry, it has had some unintended consequences…… covering up almost every odd area in which quail could be found back in the 1960s. A major reduction in the amount of fescue on your property is one of the keys to quail restoration. Here are a few tips from my experiences with killing fescue:

1. My best kills have been with late fall applications of glyphosate. Make sure the fescue has not gone dormant and the daytime high when you spray is going to be at least 60 degrees Fahrenheit. By following these rules, I have successfully annihilated fescue as late as the first week of December.
2. Don't assume that one treatment will do the trick. Many landowners spray in the fall, quickly plant a quail-friendly grass in the spring and then wonder why the fescue came back with such a vengeance. You must re-treat the field in the spring. A spring burn to remove the dead litter will many times kill new fescue seedlings or germinating seed or it could cause remaining plants to green up quicker. Be vigilant before you replant!
3. Don't stop with just spraying the field, but spray the edges, borders and odd areas, too. This reduces the chances for fescue to re-infest your field AND these are the most important quail habitat areas on the landscape. Use a handgun or flood nozzle to get in under the trees and shrubs after they have lost their leaves.

4. My favorite fescue destruction recipe is:
   a. Apply 1 qt./ac. glyphosate, plus 6-7 oz. nonionic surfactant in 10-20 gal. water/ac. and 17 lb. spray grade ammonium sulfate/100 gal. solution, between Sept. 1 and Dec. 1 when fescue is 8-10" tall and actively growing (60-70 degrees).
   b. Re-treat in April or May with 1 qt./ac. glyphosate. There will probably not be adequate growth for treatment before April 1 in the south zone, or April 15 in the north.
5. Another fescue annihilation recipe involves the use of Journey herbicide, which is a formulation containing the old Plateau herbicide and glyphosate. This will provide pre-emergent control of fescue and certain weed seedlings.

JOURNEY + Glyphosate gives better fescue control than either herbicide by itself plus annual grass control, eliminating the need for weed-control mowings. Apply 16-32 oz. JOURNEY + 16-48 oz/ac. glyphosate + 32 oz. MSO in 10-20 gal. water/ac. and 17 lb. spray-grade ammonium sulfate/100 gal. of solution (omit both MSO and ammonium sulfate if using ACCORD OR ROUNDUP PRO) when fescue is 8-10 inches tall.

Check with your local agri-service center for information on these and other herbicides labeled for fescue and then …….May your fields be full of dead and dying fescue…….

CP29 Wildlife Habitat Buffers on Marginal Pastureland

The CP29 practice is a great way to add quail and pheasant habitat on pasture ground along streams or other water bodies. Landowners choose a native mix of wildlife-friendly grass and forb species, plus shrubby cover in the form of planted shrubs, edge feathering, or downed tree structures. The CP29 buffer practice lets you add good nesting cover in the form of native grasses, shrubby cover, and bare ground adjacent to your pasture.

Here is an example: You own 80 acres of pasture/hayground with a creek running through it and have 2 ponds. You may be eligible for a 120 ft wide CP29 buffer around both ponds and along the edge of the creek if it doesn't already have an adequate buffer. Cost share is available for fencing out creeks and ponds, too. If you are fencing off a primary water source for your cattle, there may be an opportunity for alternative water – well, pipeline, and tank.

Program specs

- Eligible on pasture land adjacent to water bodies
- 25-120 ft in width
- 10-15 yr contract length, up to 90% cost-share, annual rental payment, $100-$150/acre signup bonus

Technical specs

- Required to plant native warm-season grasses plus 0.5 pound of native forbs per acre
- 1/10th acre per ¼ mile of buffer will be in planted shrubs, edge feathering, or downed tree structures
- Mid-contract management is required for contracts 5 acres and larger.

For more information or to sign up, please visit your local USDA Service Center and ask for CP29 Wildlife Habitat Buffers. If you are not eligible for CP29 there could be another program your land is eligible for. Several opportunities exist to manage your property for quail using Farm Bill programs.

Did You Know???

Quail require different habitat types at different times of the year. Nesting habitat is needed from April into September. Preferred nesting grasses include little bluestem, sideoats grama, and broomsedge. Once the chicks hatch, quail broods need a diverse grass, wildflower, weed, and legume bugging area with plenty of bare ground to maneuver through. Finally, shrubby cover is important not only for protection from predators and extreme cold, but also in the summer for loafing and shade. A well developed shrubby headquarter will be several degrees cooler in the summer and warmer in the winter than the surrounding habitat. Good quail managers ensure all habitat types are adjacent to one another. Do you have all these habitat types in close proximity on your farm?

Mark Your Calendars

Prescribed Burn Workshops

March 23, 2007 – 9AM at the Blind Pony Conservation Area in Saline County. Demo burn, weather permitting. Contact Brent Vandeloecht at 660-886-7447 ext. 112 to register.

March 24, 2007 – 9AM to 3PM at the Moberly NRCS office. Demo burn, weather permitting. Contact Ted Seiler at 660-385-2616 ext. 3 to register.

Quail Management Field Days

March 31, 2007 – 9AM, three miles east of Mound City on Hwy. 59. Topics covered - prescribed burning, edge feathering, shrub planting, food plots, CRP management, etc. Contact Jim Pierson to register at 660-442-3173

May 19, 2007 – 9AM to Noon. Meet at the Carlton house on the Poosey Conservation Area located off county road 510. From Chillicothe, travel 10 miles west on Hwy 190 to U. Turn north on U and go 4.5 miles. Turn east on gravel 510 at the MDC Indian Creek Lake sign and go 1 mile. Turn left at the drive to the Carlton house. Signs will be posted. Contact Scott Roy at 660-359-5685 ext. 114 for more information.

UNIVERSITY OF MISSOURI Extension

NRCS Natural Resources Conservation Service

Quail UNLIMITED

CONSERVATION DEPARTMENT MISSOURI

The Covey Headquarters Newsletter
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